

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL**96-024B****INSTRUCTIONS**

1. The preparing activity must complete blocks 1,2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
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I RECOMMEND A CHANGE:1. DOCUMENT NUMBER
MIL-STD-2500A2. DOCUMENT DATE (YYMMDD)
941012

3. DOCUMENT TITLE

National Imagery Transmission Format (Version 2.0)4. NATURE OF CHANGE *(Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)***Add paragraphs 5.2.1 and 5.10 (see attached.)**

5. REASON FOR RECOMMENDATION

Some imagery file generators need to begin transmitting a file before the data is available to populate all required fields in the NITF file header.

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NITF CABOOSE FILE HEADER CAPABILITY

PROBLEM STATEMENT:

Some imagery file generators need to begin transmitting a file before all the data is available that is needed to populate all required fields in the NITF file header.

ASSUMPTIONS:

1. The compressed size of an image is not known prior to the start of transmission of the specific image.
2. The content of all required fields in the image subheader is known prior to the start of transmission of that specific image, including SDE and other Tag information.
3. Number of all images and annotations is known prior to start of file transmission.
4. Number of all text components is known prior to start of file transmission.
5. Number of all DESs is known prior to start of file transmission. If the need for overflow DESs is unknown, place holder DESs (that may have no useful content) can be used to reserve a place for overflow.

ISSUES ADDRESSED:

1. How generic should the proposed mechanism be:
 - Applicable to files containing only a single image? NO
 - Applicable to files containing single and multiple images? YES
 - Applicable to JPEG compressed images? YES
 - Applicable to uncompressed images? YES (May have multiple images in file, but not know the length of follow-on images until transmission has been initiated for previous images.)
 - Applicable to any combination / permutations of valid NITF content types? YES, as long as number of components are known prior to start of transmission.
 - Applicable to any CLEVEL? NO - New CLEVEL 07 only

OUTLINE OF PROPOSED SOLUTION

- Identify a file containing a Caboose File Header as CLEVEL = 07
- Establish codes for length fields in the file header that signal the information is not available. For example, fill the fields with a negative zero value (for example, "-00000")
- Create a specific Reserved Extension Segment (RES) to be placed at the end of the file which contains the Caboose File Header information.

ADD new paragraph 5.2.1:

5.2.1 Incomplete Header. Several length fields in the file header are needed to parse the file. They contain the lengths of specific components of the file (i.e., HL through LDnnn). In some operational circumstances (e.g., those with critical time or storage constraints) all the information needed to populate the header fields may not be available at the start of file creation. If all the fields in the file header cannot be filled with valid data, a special Reserved Extension Segment (see 5.10) shall be used to provide the data needed to complete the file header. Incomplete length fields shall be filled with a leading minus (0x2D) and the appropriate number of "0" characters (0x30) as place holders. A system receiving a file with an incomplete header shall locate the reserved extension and interpret the data in the RES as though it is actually located at the beginning of the file. As an option it may re-store the file header fragment from the RES to populate the header. Any modification of this file shall result in the file being stored with a fully compliant header.

Change Table II CLEVEL Value Definitions And Constraints:

Currently:

This field shall contain the compliance level required to interpret fully all components of the file. Valid entries are integer values 01 through 06 and 99 and are assigned in accordance with certification requirements established in JIEO Circular 9008. Values 00, and 07 through 98 are reserved for future use.

New:

This field shall contain the compliance level required to interpret fully all components of the file. Valid entries are integer values 01 through 07 and 99 and are assigned in accordance with certification requirements established in JIEO Circular 9008. Values 00, and 08 through 98 are reserved for future use.

ADD new paragraph 5.10:

5.10 Corrected File Header Reserved Extension Segment The Reserved Extension Segment defined in tables XIX and XX contains the replacement file header values described in 5.2.1. The CFHDR field of this segment shall contain a new version of the file's beginning. A system encountering incomplete file header fields (see 5.2.1) shall update the stored file by locating this segment at or near the end of the file and using the updated header values as if they were in the file header. Two unique delimiter fields straddle the characters of the replacement header to facilitate locating this segment by searching the area near the file end in either the forward or reverse direction. To ensure that valid delimiters are found (rather than data containing similar values), the RESCHL length field is repeated and located adjacent to each delimiter; their contents, and the number of characters between the delimiters must all agree. The segment may contain a complete file header, a subset of the file header, or may extend beyond the file header to include fields within the subsequent subheader.

ADD new tables XIX and XX:

TABLE XIX. Replacement File Header RES subheader format

(R) = required, (O) = optional, and (C) conditional

	FIELD	NAME	SIZE	VALUE RANGE	TYPE
S	RE	File Part Type	2	RE	R
H	RESID	Unique RES type identifier	25	"Replacement File Header "	R
D	RESVER	Version of the data field definition	2	01	R
R	RESSG	Security Group.	167	(See table A-1, FSCLAS through FSDWNG)	R
	RESSHL	Length of user-defined Subheader Fields	4	0000	R
D	CFH-L	Length of CFH-DR field	7	0 - 9999999	R
A	CFH-DELIM1	Unique delimiter 1	4	0x0A6E1D97	R
T	CFH-DR	Replacement Data	**		R
A	CFH-DELIM2	Unique delimiter 2	4	0x0ECA14BF	R
	CFH-L	Length of CFH-DR field	7	0 - 9999999	R

**As specified in CFH-DR

TABLE XX. Replacement file Header RES subheader field definitions.

FIELD	VALUE DEFINITIONS AND CONSTRAINTS
RE	This field shall contain the characters "RE" to identify the subheader as a reserved extension.
RESID	This field shall contain "Replacement File Header " (without the quotes).
RESVER	This field shall contain 01, the version number of this definition.
RESSG	This field shall contain a series of fields containing security classification information for the DES as a whole. The fields included shall mirror those of the NITF file header from FSCLAS through FSDWNG, including the field length and content, but be applicable to the RES only. The field names shall be RESCLAS through RESDEVT respectively, simply substituting "RE" for "F."
RESSHL	This field shall contain 0000.
CFH-L	This field shall contain the number of bytes in the field CFHDR.
CFH-DELIM1	This field shall contain the hexadecimal value 0x0A6E1D97. It provides a unique value that can be identified as the beginning of the replacement data.
CFHDR	This field shall contain the byte string replacement for the file header beginning with the FHDR field and continuing for the number of bytes indicated in CFH-L. The file header replication shall at least continue through all the file header fields that are marked for correction.
CFH-DELIM2	This field shall contain the hexadecimal value 0x0ECA14BF. It provides a unique value that can be identified as the end of the replacement data.
CFH-L	A repeat of CFH-L, this field shall contain the number of bytes in the field CFHDR.